set forth additional aspects of Applicants' invention to which Applicants are entitled patent protection.

The disclosure stands objected to because in claim 32, line 9, the sequence "Ais" should be changed to "His". Additionally, claim 33 should end with a period. These corrections, as well as others, have been made to claims 32 and 33. Accordingly, the objection to the disclosure should be obviated.

The specification is objected to and claims 10, 15, 36, 37, 42, 43 and 48 are rejected under 35 USC § 112 first paragraph, in that it was not evident that each of the plasmids and microorganisms mentioned therein is permanently available to the public. As in Applicant's parent application, reference to plasmid pSC1 has been deleted from the specification and claims. With regard to the plasmids pBR322, pCR1 and pMB9, Applicants submit that such plasmids are well known in the art and are publicly available from various sources. For example, each of these well-known plasmids is available from the American Type Culture Collection (see, pgs. 31, 33 and 39 of the ATCC Catalogue of Recombinant DNA Materials, 1991, copies attached as Exhibit A). With respect to the recombinant plasmid of claims 10, 15 and 48 which was deposited by Applicants, it is noted that the Examiner contends that the "Notice re Deposit of Microorganism" filed August 29, 1983

is insufficient to establish permanent availability because the contract with the ATCC is for thirty years from the date of deposit. Applicants are contracting with the American Type Culture Collection to assure availability of such strain during the pendency of this application and the term of any patent issuing thereon. Applicants will also replace the culture if it should become nonviable. A supplemental Notice re Deposit of Microorganism will be filed in this application in due course. Accordingly, Applicants submit that the rejection of the claims under 35 USC § 112 as failing to provide an enabling disclosure is now unwarranted and should be withdrawn.

Claims 11-14 and 30-48 are rejected under 35 USC § 112 as indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Each of the claims mentioned by the Examiner has been amended to remove the language found to be indefinite. Accordingly, this rejection is also deemed to be unwarranted and withdrawal thereof is requested.

New claims 49-52 and 55-57 are drawn to expression of the DNA encoding human fibroblast β_1 interferon. Such DNA has been found patentable to Applicants in copending Application Serial No. 06/201,359 as a result of Interference No. 101,096, in which the Federal Circuit held that applicant had priority of

invention for the DNA over two other applicants, Walter C. Fiers (Serial No. 250,609, filed April 3, 1981) and M. Revel et al. (Serial No. 425,935 filed September 28, 1982). A copy of the decision of the Court of Appeals for the Federal Circuit was attached to Applicants' Status Inquiry filed April 19, 1993. Claims 53, 54, 58 and 59 are drawn to the recombinant human fibroblast β_1 interferon which results from such expression. As is illustrated below, support for the new claims is found in the specification. Accordingly, entry and allowance of these claims is respectfully requested.

In addition to the disclosure of the entire amino acid sequence for human fibroblast β_1 interferon, support for the phraseology in claims 49 and 51-58 is found in the specification, e.g., at the following locations:

> The recombinant plasmid of the present invention is a recombinant plasmid wherein the DNA mentioned above is inserted in a vector DNA such as pBR322...[page 3, lines 31-33].
>
> The DNA and the recombinant plasmid are inserted in a host microorganism and the transformant can be used to produce a substance having interferon activity. [page 3, line 37 to page 4, line 1].
>
> The present novel recombinant plasmids having a gene which encompasses at least the entire coding region of the human fibroblast interferon mRNA are very useful because they enable mass production of interferon in Escherichia coli or in eukaryotic cells which can be grown on a large scale [page 8, lines 31-35].

Therefore, transformation of the plasmid or mRNA inserted therein to other expression plasmids enables a host such as Escherichia coli to produce interferon [page 18, lines 13-15].

Furthermore, the present application, as filed included claims drawn to expression, e.g. claims 16 and 17; and since August 1993 has included claims pertaining to the expression of the human fibroblast β_1 interferon polypeptide e.g. claims 44 and 45. These latter claims are believed to be in allowable condition. Thus, the newly submitted claims are only an amplification of the subject matter originally disclosed and claimed in the present application.

Moreover, as of the priority date of this application (at least March 18, 1980), expression of a gene, such as that for human fibroblast β_1 interferon, was conventional to those skilled in the art, i.e., requiring nothing more than routine experimentation. This is evidenced, for example, by the attached table (Exhibit B) summarizing details of 16 genes which had been expressed prior to such priority date.

Support for expression plasmid claim 50 is also based on the foregoing passages, as well as what is inherent from these passages. This claim expressly requires that the DNA be "operably linked" in the plasmid

such that expression of the "operably linked" DNA will be achieved. This is necessarily and inevitably conveyed to a skilled worker by the term "expression plasmid", which unambiguously refers to a plasmid having sequences which enable and control expression of DNA inserted into the plasmid such that the plasmid sequences can exert their enabling and controlling effect. The conventionality of all of this is again shown by reference to the 16 expression systems summarized in the attached table. The latter lists only expression systems for eukaryotic genes and does not include the many systems which had been applied to prokaryotic genes as of the priority date.

Since Applicants have been awarded priority of invention and the right to obtain a patent on DNA encoding human fibroblast β_1 interferon, and further since expression of such DNA was routine as of the Applicants' priority date (the earliest date of invention of any party to the mentioned interference), it is clear that the expression of such DNA can be patentable only to Applicants. Thus, a further interference with the other parties to Interference No. 101,096 is precluded, e.g., by 37 C.F.R. §1.603, requiring that an applicant can participate in an interference only if the involved subject matter is patentable to it. Since expression of the DNA of

interest is patentable only to the present Applicants, no interference is warranted.

Similarly, in view of the award of priority to Applicants in Interference 101,096 and in view of the conventionality of expressing protein, transforming cells, and modifying plasmids, all using the DNA at issue in such interference, it is respectfully submitted that in no case can a patent issue to any other party to the interference on subject matter also disclosed by Applicant without there being another interference, in view of Applicant's status as prima facie first to invent all such subject matter.

Claims 10-15 and 30-59 are in prosecution.

In view of the above amendments and remarks, Applicants submit that all of the claims are now in allowable condition. Accordingly, favorable consideration and allowance of this application is earnestly solicited.

Respectfully submitted,

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